

Patterns

Extending Patterns:

Write the next two terms in the pattern, then describe the pattern either with words or as an algebraic equation.

Example: 1, 3, 5, 7, 9, 11, 13

What is the pattern? Odd numbers

1, 2, 3, 5, 7, 11, 13, 17

What is the pattern? prime numbers

1, 2, 3, 5, 8, 13, 21, 24

What is the pattern? Fibonacci sequence

3, 9, 27, 81, 243, 729

What is the pattern? 3^x

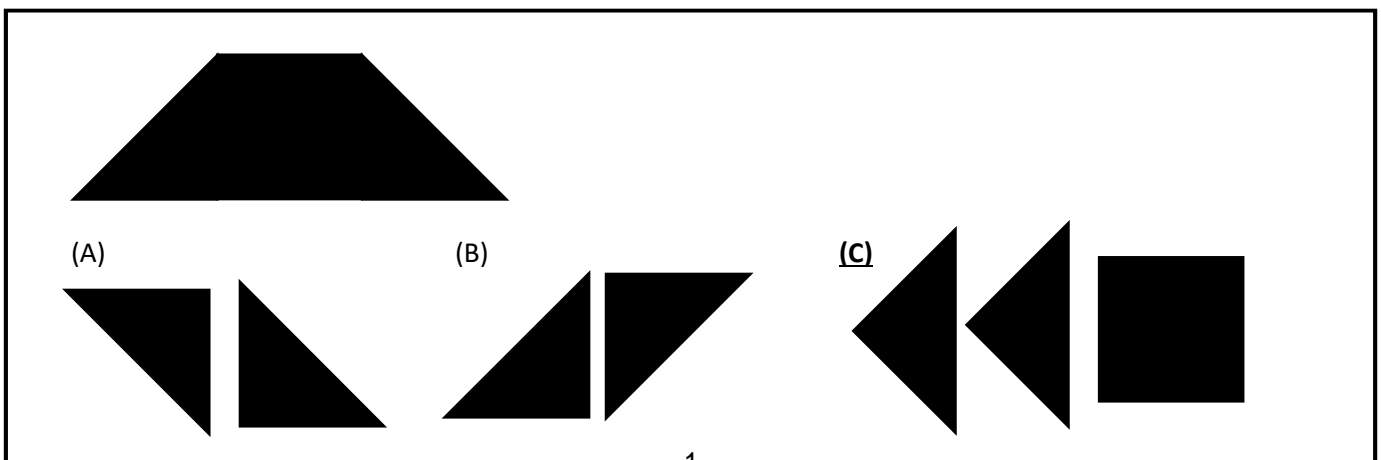
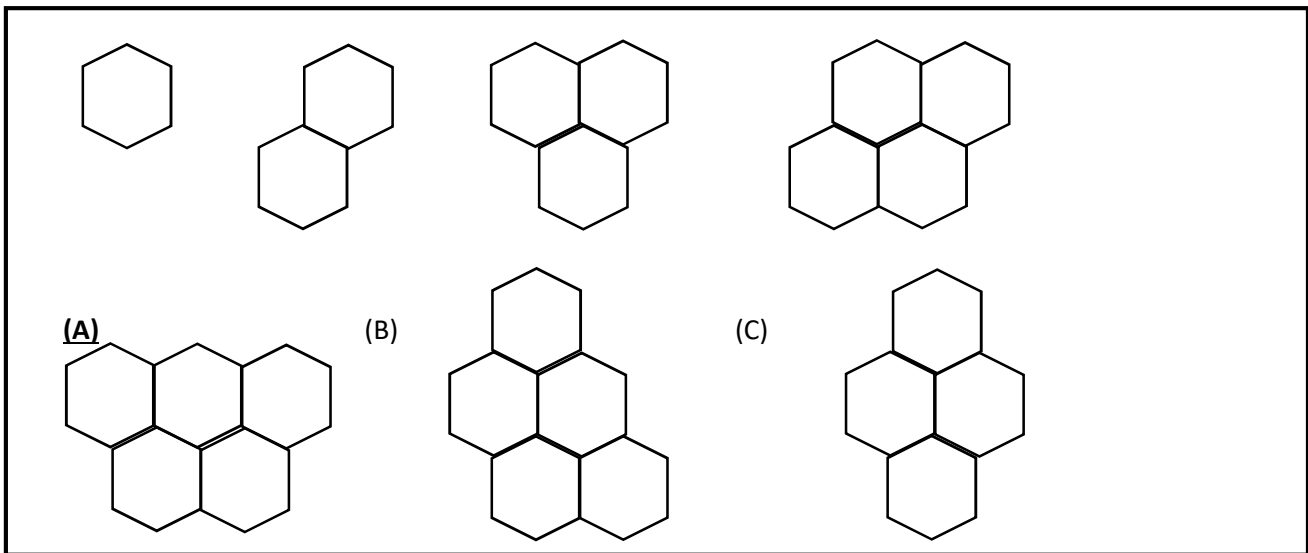
$\frac{3}{2}$, 2, $\frac{5}{2}$, 3, $\frac{7}{2}$, 4

What is the pattern? $\frac{x}{2} + 1$

1, 4, 9, 16, 25, 36, 49

What is the pattern? $(x+1)^2$

Determine which object is the next term in the pattern:



Patterns

Determine which letter is next in the pattern:

A B D G K P V

What should go in the black square to complete the grid? !

	II	I		II	I
II		I	II		I
	I	I	II	I	I
III		?			II
	III		II		I
I		II		III	

Circle the object that does not belong in the sequence:

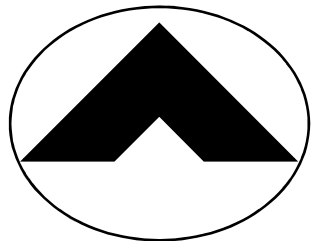
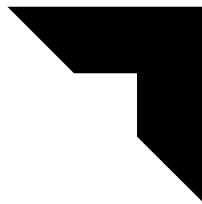
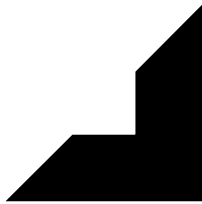
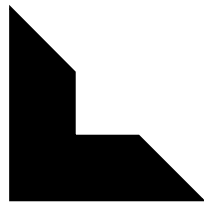
A

F

N

H

W



Answer Key

Using the hints listed above, see if you can figure out the solution for these rebus puzzles:



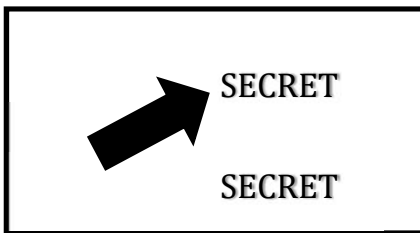
For instance



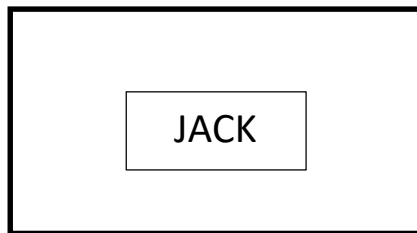
Small talk



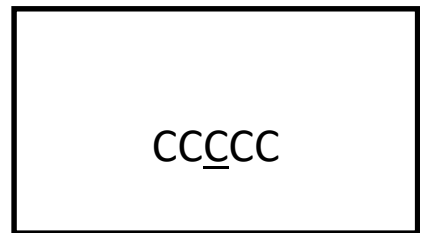
Up to a point



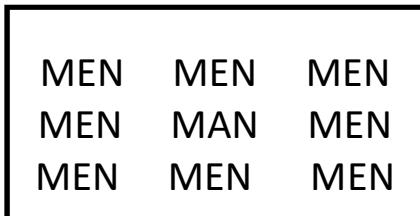
Top secret



Jack in the box



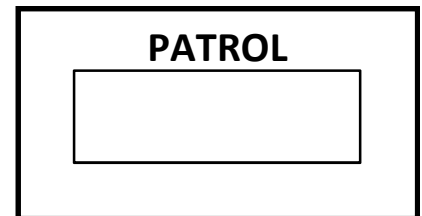
Middle C



A man among men



See no evil



Border patrol

Pictogram / Rebus Practice Puzzles

Thumb Thumb
 Thumb Thumb
 Thumb Thumb...

All thumbs

WALKING
 ICE

Walking on thin ice

Get
 Get It
 Get
 Get

Forget about it

Sailing
 ccccccc

Sailing on the seven seas

ECNALG


Backward glance

BIRD

Big Bird

R
 O
 R O A D S
 D
 S

At crossroads

 SECRET
 SECRET
 SECRET
 SECRET

Top secret

PAWALKRK

A walk in the park

GENERA ____ TION

Generation gap

LI1FETI1ME

Once in a lifetime

VEEGTABLES
 SELBATVEGE
 GETAVEBLES
 VEGETLBAES

Mixed vegetables

KenKen Answer Key

Within each KenKen puzzle, the grid is divided into different shapes, shown by heavy outlines. Within each heavily outlined shape, use the indicated math operator (addition, subtraction, multiplication, or division) to reach the solution indicated next to the math operator.

In these KenKen puzzles, the digits 1 through 4 appear exactly once in each row and column:

#1

3	1	2	4
4	3	1	2
1	2	4	3
2	4	3	1

#2

1	4	3	2
4	1	2	3
3	2	4	1
2	3	1	4

#3

2	4	1	3
1	3	2	4
3	2	4	1
4	1	3	2

Now, try these KenKen puzzles that use the digits 1 through 6:

#4

4	2	3	5	1	6
6	1	4	2	3	5
1	3	6	4	5	2
2	4	5	3	6	1
5	6	2	1	4	3
3	5	1	6	2	4

#5

1	4	2	5	6	3
4	5	3	6	1	2
5	6	4	2	3	1
3	1	6	4	2	5
6	2	1	3	5	4
2	3	5	1	4	6

In these KenKen puzzles, the digits 1 through 7 appear exactly once in each row and column.

#6

7	2	1	5	6	4	3
5	3	4	1	7	6	2
1	7	2	6	5	3	4
6	1	3	4	2	7	5
2	4	5	7	3	1	6
4	5	6	3	1	2	7
3	6	7	2	4	5	1

#7

2	3	4	5	6	7	1
3	4	5	6	7	1	2
4	5	6	7	1	2	3
5	6	7	1	2	3	4
6	7	1	2	3	4	5
7	1	2	3	4	5	6
1	2	3	4	5	6	7

Sudoku Problems

Sudoku #2 and #3 use the digits from 1 through 6.

Sudoku #4 and #5 use the digits from 1 through 9.

Hint: If you are able to narrow down the possible digits for a square, it is sometimes helpful to write down the possible digits as "place holders".

For example, in Sudoku #4, in the upper right-hand box, the digits 3 and 6 can only be in the empty squares in column 7, rows 2 and 3, because there are 3's and 6's already in row 1 and column 9.

A 3 and a 6 may be written down in the two empty squares as "place holders", as shown, until it is determined which square is 3 and which square is 6.

Sudoku #1

3	2	5	4	6	8	7	9	1
4	6	8	7	9	1	3	2	5
7	9	1	2	3	5	6	4	8
2	1	4	8	7	6	9	5	3
5	3	6	9	4	2	8	1	7
9	8	7	5	1	3	4	6	2
6	5	9	1	8	7	2	3	4
8	4	2	3	5	9	1	7	6
1	7	3	6	2	4	5	8	9

Sudoku #2

4	8	1	2	9	7	3	6	5
7	9	3	8	6	5	1	2	4
5	6	2	3	1	4	8	7	9
1	3	4	6	8	2	5	9	7
2	7	8	9	5	1	6	4	3
6	5	9	7	4	3	2	8	1
3	1	6	4	2	9	7	5	8
8	4	5	1	7	6	9	3	2
9	2	7	5	3	8	4	1	6

Sudoku #3

4	2	1	3	5	6	9	7	8
9	6	5	7	2	8	1	3	4
7	3	8	4	9	1	5	6	2
5	4	7	1	3	2	6	8	9
1	8	2	5	6	9	3	4	7
6	9	3	8	7	4	2	1	5
2	7	4	9	1	3	8	5	6
8	1	6	2	4	5	7	9	3
3	5	9	6	8	7	4	2	1

Sudoku #4

8	2	9	3	7	6	5	1	4
4	1	3	8	2	5	9	6	7
5	6	7	9	1	4	2	8	3
1	5	4	7	8	3	6	9	2
2	3	6	1	4	9	7	5	8
7	9	8	6	5	2	4	3	1
3	8	2	5	6	7	1	4	9
6	7	1	4	9	8	3	2	5
9	4	5	2	3	1	8	7	6

Wordoku Problems

The word used in each wordoku is indicated next to the puzzle number. Letters may only be used once in each row, column, and outlined box.

Wordoku #1: COLUMN

C	M	N	U	L	O
O	L	U	M	C	N
N	O	L	C	U	M
M	U	C	O	N	L
L	C	M	N	O	U
U	N	O	L	M	C

Wordoku #2: WATSON

N	W	A	O	S	T
T	S	O	N	W	A
S	N	W	T	A	O
O	A	T	S	N	W
W	T	N	A	O	S
A	O	S	W	T	N

Wordoku #3: HOLMES

H	M	L	S	E	O
S	O	E	H	M	L
O	L	S	E	H	M
M	E	H	L	O	S
L	H	M	O	S	E
E	S	O	M	L	H

Wordoku #4: EDUCATION

D	E	N	I	U	T	A	O	C
O	I	U	C	A	N	E	D	T
A	C	T	D	O	E	U	N	I
I	U	D	O	E	A	T	C	N
T	O	A	N	C	D	I	E	U
E	N	C	U	T	I	O	A	D
U	A	E	T	N	C	D	I	O
N	D	O	E	I	U	C	T	A
C	T	I	A	D	O	N	U	E

Wordoku #5: INSPECTOR

O	N	T	I	R	S	C	E	P
I	C	P	E	T	N	S	O	R
S	R	E	C	O	P	T	N	I
C	I	S	O	P	R	N	T	E
N	P	R	S	E	T	I	C	O
E	T	O	N	I	C	R	P	S
R	O	I	T	N	E	P	S	C
T	E	C	P	S	I	O	R	N
P	S	N	R	C	O	E	I	T

Cryptofamilies are cryptograms that use a list of related words. Each box below contains a cryptofamily; each box uses a different code. Use the hint to help break the codes.

Into the Woods	The Amusement Park	National Parks
RWBR—TENT	GRTTOD EJRR— FERRIS WHEEL	TVQHE DQHNH— GRAND CANYON
VLXJOLXJ—BACKPACK	TPAART VPSDYRT— ROLLER COASTER	NCOOLXWBLHC— YELLOWSTONE
A'NIEWA —S'MORES	VPYYPM VSMFU— COTTON CANDY	CFCVTPQECW— EVERGLADES
GUJUBF—HIKING	GIM JPIDR—FUN HOUSE	ECQBY FQPPCN— DEATH VALLEY
XLNOUBF—CAMPING	VSTPIDRA—CAROUSEL	NLWCJKBC—YOSEMITE
XLNODUEW— CAMPFIRE	VSTMOBA HSZRD— CARNIVAL GAMES	DQVOWGQE DQFCVHW - CARLSBAD CAVERNS
FGIAR ARIEUWA— GHOST STORIES	NIZQRT VSTD— BUMPER CARS	GVNDC DQHNH— BRYCE CANYON
IYRSIEA-OUTDOORS	QPQVPTM—POPCORN	DVQBCV OQIC

Now, try to find the codes for the following quotes from famous people.

Note, the famous person's name is listed at the end of each cryptogram. A different substitution code is used for each cryptogram.

“K NZRD Z CFDZU GNZG LYD CZH GNKX YZGKLY SKPP FKXD JQ ZYC PKRD LJJ GND GFJD
 “I HAVE A DREAM THAT ONE DAY THIS NATION WILL RISE UP AND LIVE OUT THE TRUE
 UDZYKYB LV KGX EFDDC. ‘SD NLPC GNDXD GFJGNX GL TD XDPV—DRKCDYG, GNZG ZPP
 MEANING OF ITS CREED. ‘WE HOLD THESE TRUTHS TO BE SELF — EVIDENT, THAT ALL
 UDY ZFD EFDZGDC DAJZP.” -UZFGDY PJGNDF IKYB, MF.
 MEN ARE CREATED EQUAL.” - MARTIN LUTHER KING, JR.

“UKT XQYT IQO DYT SPAT IQOYFTSH, UKT STFF IQO DYT SPAT DZIQZT TSFT,
 “THE MORE YOU ARE LIKE YOURSELF, THE LESS YOU ARE LIKE ANYONE ELSE,
 RKPBK XDATF IQO OZPEOT.” - RDSU GPFZTI
 WHICH MAKES YOU UNIQUE.” - WALT DISNEY

Dropdown Quotation

Dropdown Puzzle #1

	N	O	N	E		O	F		T	H	E		M	A	N	Y	
	R	U	L	E	S		F	O	R		S	U	C	C	E	S	S
		W	I	L	L		W	O	R	K		U	N	L	E	S	S
		Y	O	U		D	O										

Dropdown Puzzle #2

	W	H	E	N		A	T		N	I	G	H	T		Y	O	U	
	C	A	N	T		S	L	E	E	P		T	A	L	K		T	O
	T	H	E		S	H	E	P	H	E	R	D		A	N	D		
S	T	O	P		C	O	U	N	T	I	N	G		S	H	E	E	P

Test Time Answer Key

Coach	Proctoring Partner	Test Date	Subject
Ms. Allie	Mr. Barry	April 8	Religion
Dr. Eloise	Ms. King	April 20	English
Mr. Garrett	Mr. Larry	April 16	History
Ms. Helen	Mr. Reed	April 15	Math
Ms. Makol	Dr. Axel	April 4	Science

Community Planning Answer Key

C	P	O	H	S	A
H	A	C	P	O	S
O	S	H	A	P	C
S	C	P	O	A	H
P	H	A	S	C	O
A	O	S	C	H	P

Table of Facilities

A = Arena

C = Church

H = Housing

O = Offices

P = Park

S = School

Cross Math

Each row and column is a mathematical equation. Fill in the empty boxes in each column and row, using the numbers from 1 to 9, to complete each equation. Each digit from 1 to 9 may only be used once in the puzzle.

For this Cross Math puzzle, math order of operations apply.

1)

6	÷	3	x	5	=	10
+		x		+		
7	-	2	+	4	=	9
-		+		-		
1	x	9	+	8	=	17
12	14	1				

2)

2	+	8	-	9	=	1
x		÷		-		
7	-	4	÷	1	=	3
-		+		x		
3	+	5	+	6	=	14
3	5	6				

Leap Frog #1 Answer Key

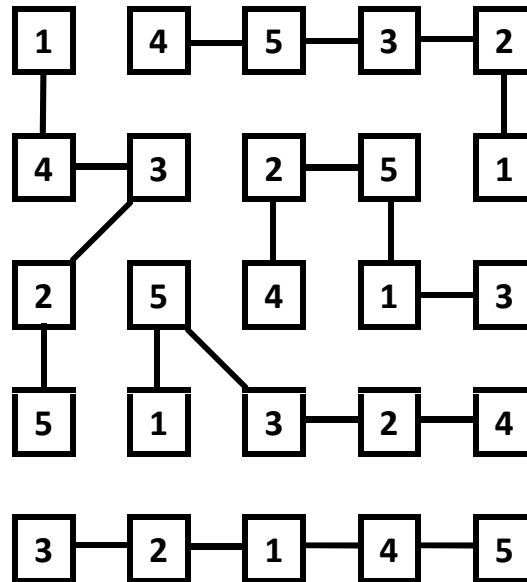
1. Common Law
2. Due Process
3. Supreme Court
4. Grand Jury
5. Electoral College

Each box contains a list of related words with the letters in each word scrambled. The theme for each list is given at the top of each box. Unscramble the letters to find the words.

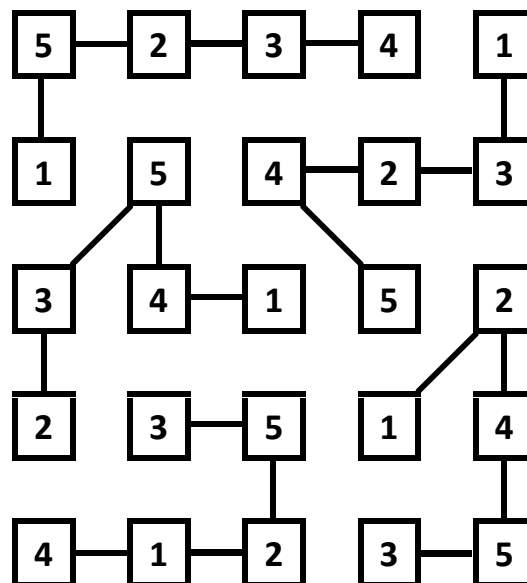
School Time	Sports Time	Summer Time
AABCCKKP - backpack	ABFLLOOT - football	CEI ACEMR - ice cream
CEERSS - recess	EINNST - tennis	AACINOTV - vacation
ACEEHRT - teacher	AABBEKLLST - basketball	EMMRSU CHLOOS - summer school
ESSTT - tests	ACGIMNSSTY - gymnastics	NOSW CENOS - snow cones
CCEEINS - science	EGILNRSTW - wrestling	AESTT AFIR - state fair
AACEHIMMSTT - mathematics	AABBELLS - baseball	GIIMMNSW - swimming
EGHILNS - English	CEHKOY - hockey	ABCEH - beach
ABILRRY - library	CCEORS - soccer	AEEMMNSTU AKPR - amusement park
AACEEFIRT - cafeteria	ABELLLLOVY - volleyball	ACIGMNP - camping
ACIILNPPR - principal	CEFGINN - fencing	CCIINP - picnic
BEKOOSTTX - textbooks	CCIGLNY - cycling	AEFMRRS AEKMRT - farmers market
BEKNOOOST - notebooks	EFGIRU AGIKNST - figure skating	FIRTU EIP - fruit pie
CEILNPS - pencils	ACKRT ADN DEFIL - track and field	OPRSST - sports

Square Roots Answer Key

Puzzle # 1



Puzzle # 2

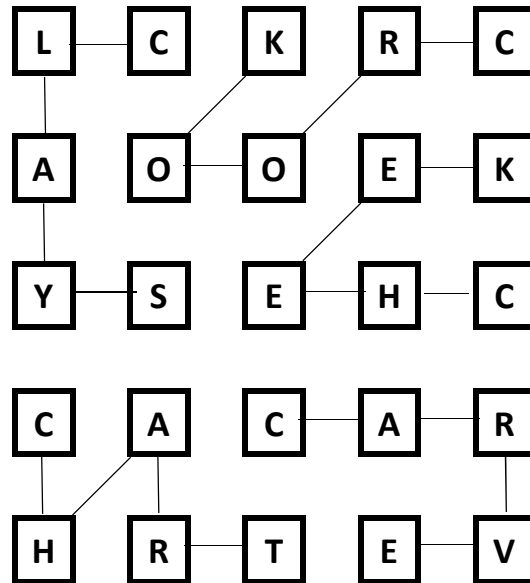


Star Grid Study Guide Answer Key

	3	★						
	★	★	2		3	★		
	5				★	★	★	2
★	★	★	1		3		3	★
2					★			
		1	★			3	★	
				1		★		

Square Routes

Hidden in each diagram are five five-letter words beginning with the same letter. Draw a continuous line connecting each letter of a five-letter word without crossing the line showing the letters of another word. Each word begins with the same letter of the alphabet.



2017 LOGIC PRACTICE TEST #1 ANSWER KEY

1) Sudoku

(800 points)

4	7	3	1	5	9	8	2	6
5	9	6	3	8	2	1	4	7
2	8	1	6	4	7	3	9	5
3	5	7	8	6	4	9	1	2
6	1	4	9	2	5	7	8	3
8	2	9	7	1	3	6	5	4
9	4	8	5	3	6	2	7	1
1	3	5	2	7	8	4	6	9
7	6	2	4	9	1	5	3	8

2) Hungry Bugs

(200 points)

Answer: $1 \frac{1}{5}$ hours or 72 minutes

3) Add a Word

(250 points - 50 points each)

- A) ELAPSE
- B) ENIGMA
- C) VESPER
- D) FLOWER
- E) PRAYER

4) Balancing Act

(300 points - 100 points each)

Answer: A = 8 kg

B = 1 kg

C = 1 kg

5) Cross Math

(400 points)

8	X	2	-	3	+	9	=	22
÷		+		X		÷		
2	+	8	X	9	-	3	=	71
+		X		+		+		
9	÷	3	-	2	+	8	=	9
-		-		-		x		
3	+	9	X	8	-	2	=	73
=		=		=		=		
10		17		21		19		

6) Add a Letter

(350 points - 50 points each)

- A) Maples
- B) Rouses
- C) Flairs
- D) Medial
- E) Decals
- F) Tiered

Word: POLICE

7) Word Dial

(500 points - 100 points each)

Words: sacred, yellow, racket, almond

Person: Mary

8) Find the Vowels

(500 points)

GREAT MEN HAVE TWO LIVES: ONE WHICH OCCURS WHILE THEY WORK ON THIS EARTH; A SECOND WHICH BEGINS AT THE DAY OF THEIR DEATH AND CONTINUES AS LONG AS THEIR IDEAS AND CONCEPTIONS REMAIN POWERFUL.

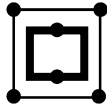
ADOLPH BERLE

2017 LOGIC PRACTICE TEST #1 ANSWER KEY

Patterns

(450 points - 150 points each)

9) D)



10) 38

11) C) 124986

12) Favorite Foods

(500 points - 100 points each)

A) 22

B) 19

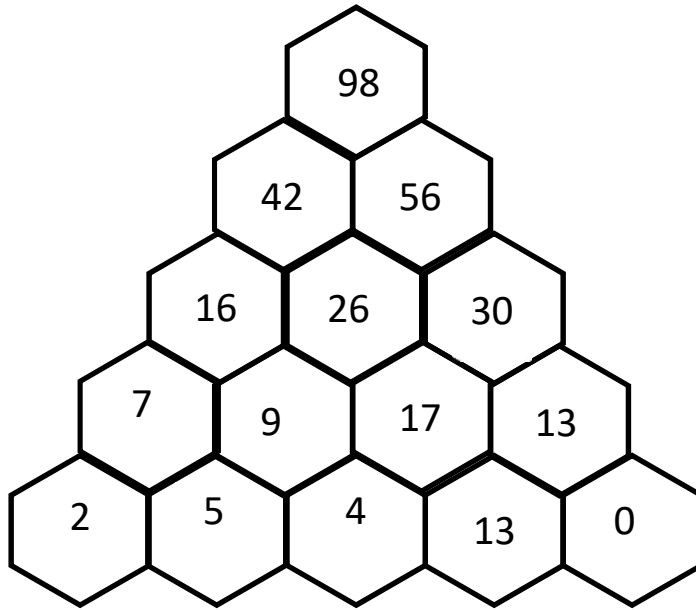
C) 16

D) 105

E) 14

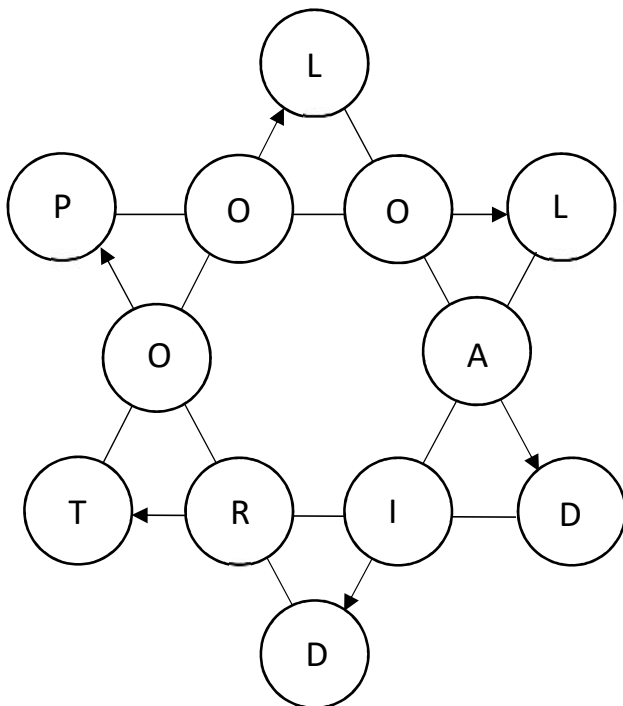
13) The Beehive

(200 points)



14) Word Star

(600 points - 50 points each)



15) Circle Around

(450 points - 50 points each)

- A) 9
- B) 8
- C) 4
- D) 3
- E) 7
- F) 1
- G) 2
- H) 5
- I) 6

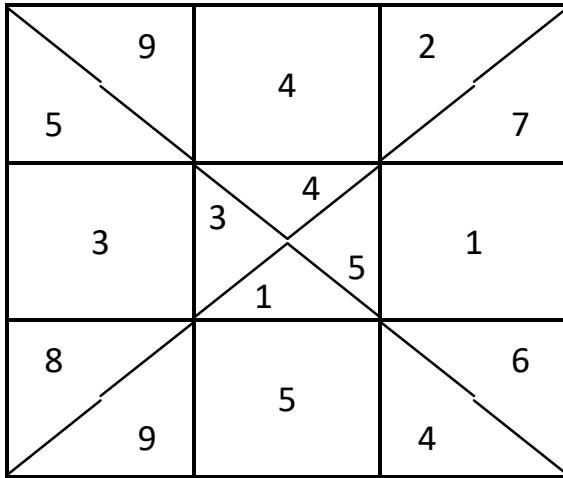
16) Logic Grid - Restaurant Review

(750 points - 50 points each)

Student	Restaurant	Day of Week	Stars
Angela	Thai Palace	Friday	1
Betsy	Café Metro	Sunday	8
Courtney	Pizza Pie	Tuesday	12
David	Texas Tacos	Thursday	4
Taylor	Shake Shack	Saturday	5

17) Triangle Sums

(450 points)



18) Riddle Time

(300 points)

What am I? a deck of cards or an actor (either answer is acceptable)

2017 LOGIC PRACTICE TEST #1 ANSWER KEY

19) From A to Z

(500 points - 20 points each)

B	E	A	U	T	I		U	L	N	A	E	T
			P	L	A	S	T	I	C			
			R	H	U	B	A	R	B			
						Q	U	A	L	I	T	Y
			P	R	O	H	I	B	I	T		
		C	H	A	R	I	O	T				
					N	U	R	T	U	R	E	
					H	E	I	R	L	O	O	M
	C	O	N	V	E	X						
		S	P	O	N	G	E					
				S	E	N	T	E	N	C	E	
						J	O	U	R	N	E	Y
		S	C	O	R	P	I	O	N			
				L	A	V	E	N	D	E	R	
	D	E	P	L	O	Y						
				A	P	R	O	N				
	I	T	E	M	I	Z	E	S				
						M	O	U	R	N		
					A	W	A	R	D			
					P	O	T	A	T	O		
			S	O	C	K	E	T				
				S	E	D	A	N				
					R	A	D	I	S	H		
	S	E	C	R	E	T						
			K	E	T	C	H	U	P			
		L	I	T	T	L	E					

20) Word Division (500 points)

Answer: PIANO / DUETS

2017 Logic Practice Test #2 Answer Key

1) **Diagonal Sudoku**

(550 points - 10 points each)

2	3	6	7	5	9	1	8	4
5	8	7	4	6	1	3	2	9
4	9	1	3	8	2	5	6	7
9	1	5	6	2	7	8	4	3
6	2	4	5	3	8	7	9	1
8	7	3	9	1	4	6	5	2
7	5	8	2	4	3	9	1	6
3	6	2	1	9	5	4	7	8
1	4	9	8	7	6	2	3	5

2) **Zig Zag Word Ladder**

(300 points)

1. CAPTAIN'S LOG
2. LOG CABIN
3. CABIN FEVER
4. FEVER PITCH
5. PITCH FORK

3) **Push Me, Pull You**

(200 points)

Speed: 20 mph

Direction: Counterclockwise

2017 Logic Practice Test #2 Answer Key

4) Snow Day (600 points - 100 points each)

How many children wore a hat, a scarf, and mittens? 3

How many children wore mittens only? 1

How many children wore a scarf only? 1

How many children wore a hat and mittens, but no scarf? 4

How many children wore mittens? 10

How many children played in the snow at the park? 18

5) Find the Vowels (320 points)

The ultimate measure of a man is not where he stands in moments of comfort and convenience, but where he stands at times of challenge and controversy.

- Martin Luther King, Jr.

6) Word Shuffle (320 points - 40 points each)

- | | | |
|-----|----------------|----------------|
| (A) | <u>Subway</u> | <u>Station</u> |
| (B) | <u>Talent</u> | <u>Search</u> |
| (C) | <u>Spring</u> | <u>Flowers</u> |
| (D) | <u>Student</u> | <u>Council</u> |

2017 Logic Practice Test #2 Answer Key

7) Crypto-Characters (500 points)

I love those who can smile in trouble, who can gather strength from distress, and grow brave by reflection. It is the business of small minds to shrink. But they whose hearts are firm, and whose conscience approves their conduct, will pursue their principles unto death.

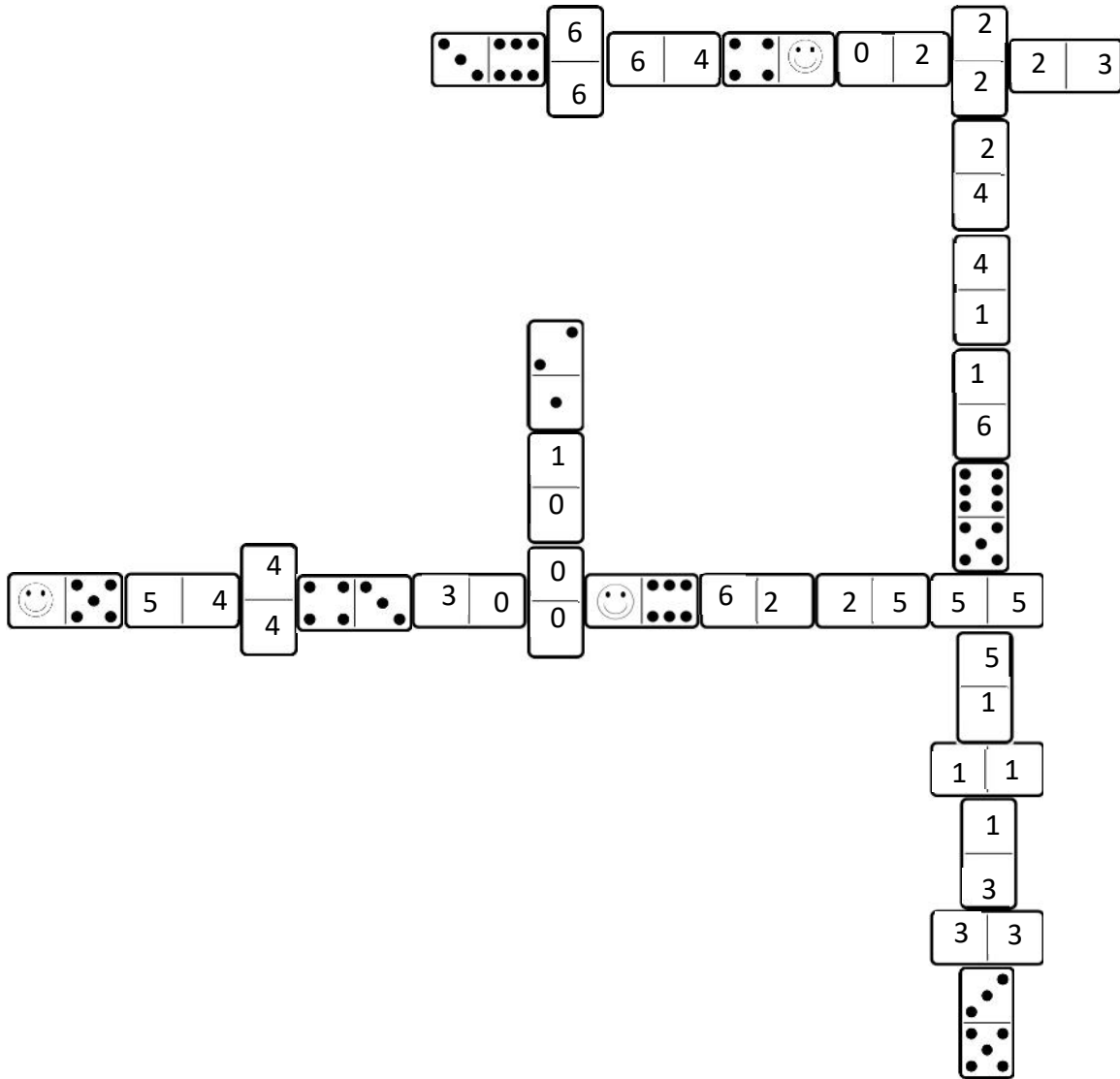
Leonardo da Vinci

8) KenKen (810 points - 10 points each)

5	8	1	6	7	2	3	9	4
6	3	2	7	4	5	9	8	1
7	5	6	9	1	3	4	2	8
2	1	5	8	3	7	6	4	9
8	4	3	1	9	6	7	5	2
1	9	8	5	6	4	2	3	7
4	6	9	2	5	1	8	7	3
3	2	7	4	8	9	5	1	6
9	7	4	3	2	8	1	6	5

9) Domino Dilemma

(300 points)



10) Synonym Sequence

(500 points)

Synonym: insight

2017 Logic Practice Test #2 Answer Key

11) So Many Combinations!

(480 points)

0	1	1	0	1	0	1	0	0	1
1	0	1	0	0	1	1	0	0	1
0	1	0	1	0	1	0	1	1	0
1	0	0	1	1	0	1	1	0	0
0	1	1	0	0	1	1	0	0	1
1	0	0	1	1	0	0	1	1	0
0	1	1	0	1	1	0	0	1	0
1	0	0	1	0	0	1	1	0	1
1	0	0	1	0	1	0	0	1	1
0	1	1	0	1	0	0	1	1	0

12) Logic Fallacy

(200 points - 100 points each)

- A) appeal to fear
- B) bandwagon

2017 Logic Practice Test #2 Answer Key

13) Shape Sorter

(350 points - 50 points each)

- A) A rectangle but not a circle? J, M, N
- B) A circle but not a triangle? A, B, C, F, G, I, O
- C) A triangle and a circle, but not a rectangle? D, E, Q
- D) A triangle, a circle and a rectangle? H, K, L, P
- E) At least two circles? B, E, F, G, H, K, L, P, Q
- F) Two triangles? H, K, P
- G) A rectangle and a triangle, but not a circle? M

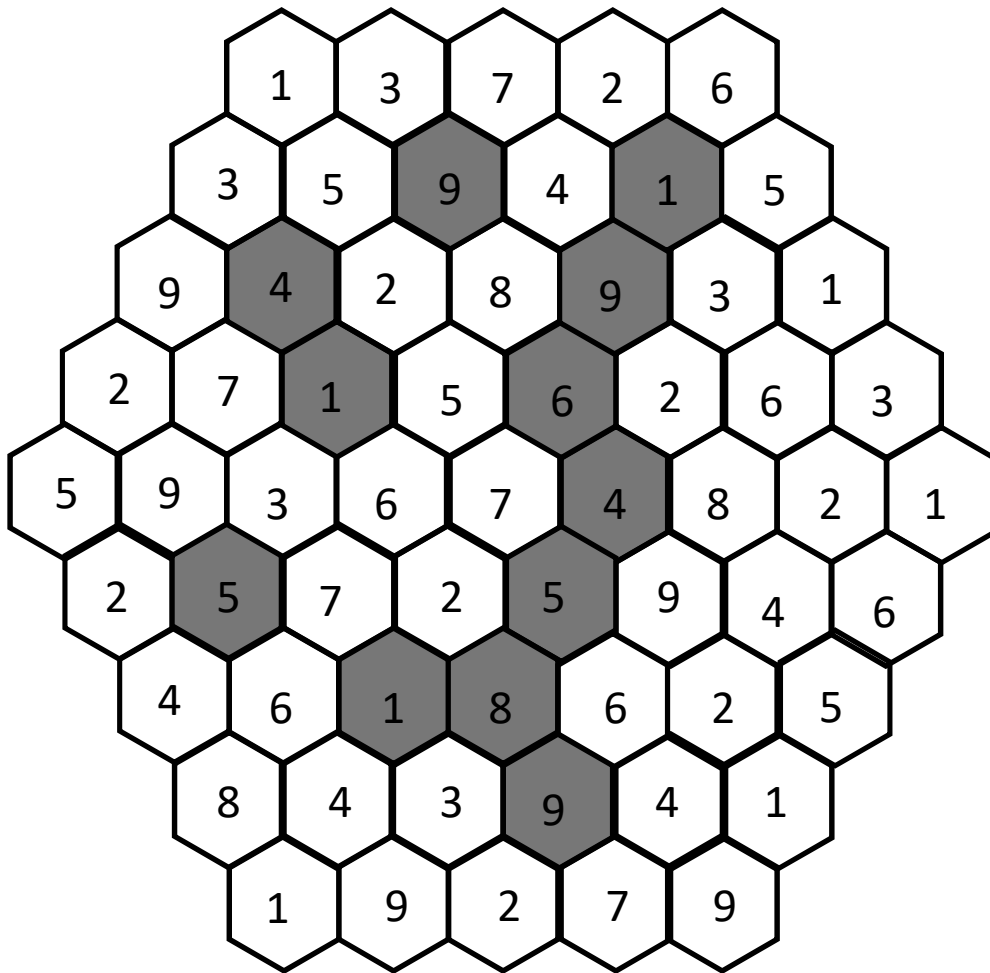
14) Kakuro

(590 points - 5 points each)

			3	1	2	7		9	6			9	5
		1	7	2	3	9	8	5	4	6		7	3
	9	3			1	6	4		7	9		2	1
	6	2		9	4	8		2	9		9	4	2
			9	6	5		3	8			8	1	
			4	8		2	4		3	7		8	4
	7	9		7	9	4		4	1	2		6	8
	5	8		4	8	1	6	7		9	7		
		1	8	5		5	9			8	4		
	2	3	9		9	6		3	2	1		7	2
	1	2		9	7		3	2	1			9	6
	8	4		2	4	5	9	8	7	6	3	1	
	9	7			2	9		9	8	2	1		

15) Stop Signs

(330 points - 30 points each)



16) Word Dial

(350 points - 35 points each)

A) aching, deputy, alkali, ritual Person: Paul

B) marmot, tamale, praise, abduct Person: Adam

2017 Logic Practice Test #2 Answer Key

17) Travel Time (200 points)

A) Madrid

18) Riddle Time: (200 points)

What word is indicated by the clues listed below? Heaven

19) Let's Go to the Movies (750 points - 50 points each)

Movie Fan	Order in Ticket Line	Type of Movie	Snack
Annie	5 th	Western	Candy
Chris	4 th	Comedy	Nachos
David	3 rd	Musical	Soda
Jenny	1 st	Documentary	Popcorn
Taylor	2 nd	Action	Ice Cream

20) Two Die Four (150 points)

What is the sum of all the numbers on the unseen sides of the four dice? 59